|  | BCM SCHOOL BASANT AVENUE DUGRI ROAD LUDHIANA CLASS XII (041) MATHS |  |
| :---: | :---: | :---: |
| 1 |  unit vector. Find angle between $\vec{a}$ and $\vec{b}$. <br> (A) $\frac{\pi}{4}$ <br> (B) $\frac{\pi}{3}$ <br> (C) $\frac{\pi}{6}$ <br> (D) $\frac{\pi}{2}$ | ${ }^{1}$ |
| ${ }^{2}$ | If ${ }^{\vec{a}=2 \hat{i}+2 \hat{j}+3 \hat{k}, \vec{b}=-\hat{i}+2 \hat{j}+\hat{k}, \vec{c}=3 \hat{i}+\hat{j}}$ are such that $\bar{a}+\lambda \bar{b}$ is $\perp$ to $\bar{c}$ is then find the value of $\lambda$. <br> (A) 8 <br> (B)6 <br> (C) -6 <br> (D) 1 | 1 |
| 3 | If ${ }^{\bar{a}, \bar{b}}$ and $\bar{c}$ be three vectors such that $\bar{a}+\bar{b}+\bar{c}=0$ and $\|\vec{a}\|=3,\|\vec{b}\|=5,\|\vec{c}\|=7$ find the angle between $\vec{a}$ and $\vec{b}$. | 2 |
| 4 | Let $\vec{a}, \vec{b}$ and $\vec{c}$ be three vectors such that $\|\vec{a}\|=3,\|\vec{b}\|=4,\|\vec{c}\|=5$ and each one of them being $\perp$ to the sum of the other two, find $\|\vec{a}+\vec{b}+\vec{c}\|$ | 2 |
| 5 | If $\begin{gathered}\vec{a}=4 \hat{i}+2 \hat{j}-\hat{k}, \vec{b}=5 \hat{i}+2 \hat{j}-3 \hat{k}\end{gathered}$. find the angel between the vectors $\bar{a}+\bar{b}$ and $\vec{a}-\bar{b}$ | 2 |
| 6 | If $\vec{a}=\hat{i}+\hat{j}+\hat{k}$ and $\vec{b}=\hat{j}-\hat{k}$ find a vector $\hat{c}$ such that $\vec{a} \times \vec{c}=\vec{b}$ and $\vec{a} \cdot \vec{c}=3$ |  |
| 7 | If $\vec{a}, \vec{b}$ and $\vec{c}$ be unit vectors such that $\vec{a} \cdot \vec{b}=\vec{a} \cdot \vec{c}=0$ and the angle between $\vec{b}$ and $\vec{c}$ is $\frac{\pi}{6}$ prove that $\vec{a}=$ $\pm 2(\vec{b} \times \vec{c})$. | 4 |

